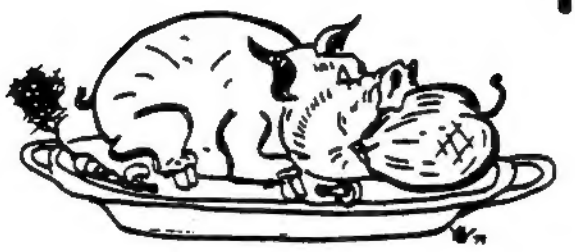
H.A.A.U.G.



HOUSTON AREA APPLE USERS GROUP

THE APPLE BARREL

VOLUME 5 NO.2 MARCH 1982

PRESIDENT, MIKE KRAMER VICE PRESIDENT, BRIAN WHALEY
EDITOR, MIKE KRAMER

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Houston Area Apple Users Group
APPLE BARREL
2218 Running Springs
Kingwood, TX 77339

CLUB NOTES

The HOUSTON AREA APPLE USERS GROUP is an Apple user club, not affiliated with Apple, Inc., or any retail computer store. HAAUG is a member of the International Apple Core and supports its publications and purposes. General membership meetings are held on the second Thursday of each month in the rear chapel of Memorial Lutheran Church, 5800 Westheimer, between Chimney Rock and Jungman Library, beginning at 6:30 P.M. An additional general meeting is held at 2:00 P.M. the last Saturday of each month at the University of Texas School of Public Health in the Medical Center at 6905 Bertner at Holcomb. This meeting features tutorials, problem-solving sessions, and access to the HAAUG software library. The meeting is held in the main floor meeting room to the left of the entrance. Bring your Apples!!

---==*==---

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MEMBERSHIP INFORMATION

Dues are $18 per 12-month period for regular memberships, $6 for students through high school where no adult member of the family is an Apple user. Please make checks payable to Houston Area Apple Users Group and mail to Robin Cox, 5401 Chimney Rock #607, Houston, TX, 77081.

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SPECIAL INTEREST GROUPS

Members who share common interest are encouraged to join or form Special Interest Groups to more fully explore their fields. These groups meet separately from the regular meetings at times convenient for the members. If you would like to become involved in a special interest group, either call the HOTLINE or contact one of the club officers. Lists of members with specific interests can be generated on request from the HAAUG MEMBERSHIP SURVEY data base.

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Personalized Pascal

by La Ray Geist

Welcome to Personalized Pascal! In the coming issues we will be disscussing topics that I hope will be of interest to intermediate and advanced Pascal programers. These topics will be aimed at serious Pascal programmers intrested in building a library of basic tools to make their programming more enjoyable. Some of these tools will be stand-alone programs and some will be Procedures and/or Functions which may be placed in Library Units for use in other programs.

This time we will build a stand-alone Program STARTUP which can be installed on the Root Diskette as *SYSTEM.STARTUP. The Apple Pascal System will automatically execute this program each time the System is Booted or re-initialized. STARTUP is a customized program which will "Prefix Volume #5" and initialize several items in systems which have optional 80 column displays and/or real time clocks. The program was designed for Apple Pascal Version 1.1 on a two drive system with a VIDEX Videoterm 80 column display board and a Mountain Hardware clock, however the idea is the same for other optional hardware and the program should be general enough to be adapted.

In order accomplish these initializations intimate knowledge of the Operating System including specific memory locations is required. The use of such information is only justified in programs which are designed to be executed on specific systems with identical hardware and system software configurations. I feel a SYSTEM.STARTUP program qualifies for this special treatment. This program will have to be rewritten each time the hardware configuration or system software is changed. STARTUP was designed to operate under Apple Pascal Version 1.1, with a VIDEX Videoterm in Slot #3, and Mountain Hardware clock in any slot. Programs which read and write specific blocks on disks and Poke numbers into specific memory locations are DANGEROUS so be careful. Remove this *SYSTEM.STARTUP from your boot diskette prior to trying out new hardware in Slot#3 or a new Version of system software. So much for the warnings - let's get down to business.

The purpose for STARTUP is to automatically take care of those housekeeping chores that are desired each time the system is Booted or re-initialized. On a two drive system it is often convenient to Prefix Volume #5 so that you don't have to type in the Volume Name (or #5) each time you are refering to a file on disk Drive #2. It is also convenient to have the System Date set by the a clock each time the system is booted. The System Date resides in the first part of the Directory of the Boot disk and is read into memory on each initialization. Therefore the System Date needs to be updated both places. The Videx Videoterm 80 column display board has a rather fast full block cursor as its default, but the cursor is programmable by Poking control codes into memory locations on the Videoterm board. The cursor blinking rate can be slowed to half of its normal hyper-active rate and converted to an underline among other options. STARTUP takes care of all of these chores and prints a 'personalized welcome' message as well.

The following simplified description of the STARTUP summarizes the program's actions.

```
Program STARTUP
 Prefix Volume #5
 Set Videx cursor (slow blinking underline)
 Read in the date from the Boot Diskette
 Check for Mountain Hardware clock (any slot)
   If a Mountain Hardware clock is there
       Read the time and date
       Update the date on the boot disk
       Update the date in memory,
 Welcome the Boot Volume to the Pascal system
   with a personalized message
   containing the current system date,
   If a Mountain Hardware clock is available
      continously update the time on the screen
   until a key is pressed
Return to the Command level of the Pascal O/S.
```

The two Assembly Languages routines for the Mountain Hardware clock were given to the now extinct UCSD Pascal User's Group by David Ramsey of Magicke Software, Inc. These appear to be excellent routines for reading the Mountain Hardware clock. David Ramsey did an superb job of commenting. As you might expect these routines are significantly faster than the functionally equivalent Pascal routines which Mountain Hardware supplies to Pascal users of their clock. We should all thank David Ramsey for placing these fine routines in the public domain. These routines were copied from Vol5B:Ext/Clock.text with only one minor modification to the Function ClockSlot. As it was written it did not update the PUBLIC variable CS (for ClockSlot). I merely added two statements to the original code PUBLIC CS just after FUNC CLOCKSLOT and STA S just prior to the RETURN PASCAL. Point of Interest - these routines are available assembled and installed in a Libray Unit in Vol5B:ClockStuff. The Assembly Language Function KeyPress was published in Apple Orchard Winter '80-81. The article was in the Contact section with no author listed. The KeyPress Function is a very general one. It is applicable to Apple Pascal Version 1.0 and 1.1 and is usable for Apples with or without a remote terminal. Most of the 80 column display cards available for the Apple look like a remote terminal to the Apple Pascal Operating System and the normal KeyPress function included in the Library Unit AppleStuff will not function with them (without patches to System.Apple). This EXTERNAL FUNCTION may be L(inked into any program needing the KeyPress Function by inserting the line "Function KeyPress : Booleam; External;" just below the VARiables section of the program heading block. After compling the Pascal text file, the KeyPress code file must be L(inked as described below. (If Segment Procedures are used in the program this `external function declaration' may be placed just after the Segment Procedures.)

Instructions

You will be exercising almost all of the Apple Pascal Language System to complete this project. You'll use the E(ditor to build both a Pascal program and the Assembly Language Procedures and Functions. The Pascal program will be C(ompiled and the Assembly Language routines will be A(ssembled into code files. The assembled code will be L(inked to the Pascal code. Finally the resultant code file will be T(ransfered to the boot diskette with the F(iler.

I find it useful to use "Work Disks" which have the files required for Compiling, Assembling and Linking new programs. The following instructions assume that the "System Disk" in Volume#4 (Drive 1) contains SYSTEM.APPLE, SYSTEM.PASCAL, SYSTEM.EDITOR, SYSTEM.FILER, SYSTEM.LIBRARY, SYSTEM.MISCINFO, SYSTEM.SYNTAX, and SYSTEM.CHARSET and the "Work Disk" in Volume#5 (Drive 2) contains SYSTEM.COMPLILER, SYSTEM.ASSMBLER, SYSTEM.LINKER, 6500.OPCODES, and 6500.ERRORS. The file names listed in these instructions are suggested but not required, however the final file *SYSTEM.STARTUP must have this name and reside on the boot diskette so that the system can find and use it.

From the Command level select
F(iler and
P(refix #5
Q(uit the filer.

E(dit the StartUp Pascal text
W(rite or S(ave it as :STARTUP.TEXT
C(ompile the Pascal text into :STARTUP.CODE

E(dit the ExtClock Assembler text
W(rite or S(ave it as :EXTCLOCK.TEXT
A(ssemble EXTCLOCK into :EXTCLOCK.CODE

E(dit the KeyPress Assembler text
W(rite or S(ave it as :KEYPRESS.TEXT
A(ssemble KEYPRESS into :KEYPRESS.CODE

L(ink the Pascal host :STARTUP.CODE
with the library :EXTCLOCK.CODE and
with the library :KEYPRESS.CODE
into :SYS.STRTUP.CODE

Select the
F(iler and
T(ransfer :SYS.STRTUP.CODE,*SYSTEM.STARTUP.

I hope you enjoy the automatic features of STARTUP as much as I do. In coming issues we will build a System.Library which contains routines to simplify user-to-Pascal communications within a Pascal program.

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```
Program   Startup;

{ Personalized *SYSTEM.STARTUP program which will:
  1. Set the PREFIX to #5,
  2. Set the cursor of a VIDEX 80 Column display to an slow blinking underline,
  3. Check for a Mountain Hardware Clock and
     a. Update the system date on the BOOT DISK and in MEMORY,
     b. Write the current time to the screen until a key is pressed,
  4. Write a personalized welcome to the system on the screen.      }

Const   firstbyte   =     20; { Used by GetOldDate and PutNewDate }
        secondbyte  =     21; { Used by GetOldDate and PutNewDate }
        register    =     10; { Used by SetVidex }
        nocursor    =     50; { Used by SetVidex }
        underline   =    104; { Used by SetVidex }
        videxaddr   = -16208; { Used by SetVidex }
        lowdate     = -21992; { Used by PutNewDate }
        prefix      = -22008; { Used by SetPrefix }

Type    Pa          = Packed Array[0..1] of 0..255;
        Magic       = Record
                        Case Boolean of
                          true  : (int : Integer);
                          false : (ptr : ^pa)
                      end;
      Daterec       = Packed Record
                        month : 0..12;
                        day   : 0..31;
                        year  : 0..100
                      end;

Var     cs,
        high,
        low,
        month,
        day,
        hour,
        minute,
        second,
        millisecond : Integer;
        today,
        lastbootday : Daterec;
        name        : String[10];
        buffer      : Packed Array [0..511] of 0..255;
        MHclock     : Boolean;
        cheat       : Magic;

Procedure TimeStamp;                External;

Function  ClockSlot : Integer;      External;

Function  KeyPress : Boolean;       External;
```

```
Function  Peek    ( addr      : Integer ) : Integer;
 Begin { Peek }
  cheat.int     := addr;
  Peek          := cheat.ptr^[0]
 end;  { Peek }

Procedure Poke    ( addr,data : Integer );
 Begin { Poke }
  data          := Abs(data Mod 256);
  cheat.int     := addr;
  cheat.ptr^[0] := data
 end;  { Poke }

Procedure CheckForClock;
Begin { CheckForClock }
  If ClockSlot < 8 then MHclock := True
                   else MHclock := False
end;  { CheckForClock }

Procedure SetVidex (code : Integer);

Var     secndaddr : Integer;

Begin  { SetVidex }
  secndaddr := videxaddr + 1;
  Poke (videxaddr,register);
  Poke (secndaddr,code)
end;   { SetVidex }


Procedure GetOldDate ( Var olddate : Daterec );

Var     i       : Integer;
        ch      : String[1];

Begin { GetOldDate }
  Unitread ( 4, buffer,512, 2);       { Read the first block of the Directory }
  high := ( buffer [ secondbyte ] ); { Get the date bytes into high and low }
  low  := ( buffer [ firstbyte  ] );
  With olddate do                     { Unpack the Date }
   Begin
     day   := ( high MOD 2 ) * 16 + low DIV 16;
     month := low MOD 16;
     year  := high DIV 2
   end;
  { Extract the Volume name }
  ch := ' ';
  name := '';
  For i := 1 to buffer[6] do
    Begin
      ch[1] := Chr(buffer[i + 6]);
      name := Concat (name,ch)
    end;
  name := Concat (name,':')
end; { GetOldDate }
```

```
Procedure PutNewDate ( newdate : Daterec );

Begin { PutNewDate }
  With newdate do                    { Pack the date into two bytes. }
   Begin
     high  := (year * 2) + (day DIV 16);
     low   := month + (day MOD 16)*16
   end;
  buffer [firstbyte]   := (low);  { Load the buffer with the date bytes. }
  buffer [secondbyte]  := (high);
  Unitwrite( 4, buffer,512, 2,12);{ Write the buffer back out to the disk. }
  Poke (lowdate  ,low);           { Update the date in memory. }
  Poke (lowdate+1,high)
end;  { PutNewDate }


Procedure WriteDate (Date: DateRec);
Begin { WriteDate }
  with Date do
    Begin
      Write(day:2,', ');
      Case month of
        1: Write('Jan.');
        2: Write('Feb.');
        3: Write('Mar.');
        4: Write('Apr.');
        5: Write('May ');
        6: Write('Jun.');
        7: Write('Jul.');
        8: Write('Aug.');
        9: Write('Sep.');
       10: Write('Oct.');
       11: Write('Nov.');
       12: Write('Dec.');
      end {Case};
      Write(' 19',year:2);
    end {with};
end;  { WriteDate }

Procedure SetPrefix;

Begin { SetPrefix }
  Poke (prefix,2);          { Set the "Prefix" to "#5". }
  Poke (prefix+1,Ord['#']);
  Poke (prefix+2,Ord['5'])
end;  { SetPrefix }
```

```
Begin   {StartUp}
  SetPrefix;                  { Set the "prefix to #5". }
  SetVidex  ( underline ); { Change the cursor to an underline. }
  GetOldDate (lastbootday);{ Get the date from the boot disk directory. }
  Page (output);
  CheckForClock;              { Check for a Moutain Hardware clock. }
{ If a clock is available update the date on the disk and in memory. }
  If MHclock then
     Begin
       Timestamp;             { Get the current date and time. }
       If (day <> lastbootday.day) or (month <> lastbootday.month) then
          Begin
            GotoXY (0,2);
            Write  ('Volume ',name ,' was last booted on ');
            Writedate (lastbootday);
            If (month <= 6) and (lastbootday.month > 6 )
               then lastbootday.year := lastbootday.year + 1;
            today.year := lastbootday.year;
            today.month:= month;
            today.day  := day;
            Putnewdate (today)
          end
     end;
{ Welcome the boot disk volume to the System. }
  GotoXY (0,10);
  Writeln('Your Message Goes Here          '); Writeln;
  Writeln('welcomes ', name, ' to Apple Pascal [Version 1.1]'); Writeln;
  If MHclock then
     Begin
       Timestamp;
       Write('at ',hour:2,':',minute:2,':',second:2,' on ');
       today.year := lastbootday.year;
       today.month:= month;
       today.day  := day;
       Writedate (today);
       GotoXY ( 0,23);  Write ('Press <Space Bar> to clear the screen.');
       GotoXY ( 0,0);
       Write
('Command: E(dit, R(un, F(ile, C(omp, L(ink, X(ecute, A(ssem, D(ebug,? [1.1]');
     { Turn off the cursor while updating the time to the screen. }
       SetVidex  ( nocursor );
     { Keep writing the time to the screen until a key is pressed. }
       Repeat
         GotoXY (3,14); Timestamp; Write (hour:2,':',minute:2,':',second:2)
       until KeyPress;
     { Turn the cursor back on as an undrline. }
       SetVidex  ( underline )
     end
    else
     Begin
       Write  ('The current date is ');
       Writedate (lastbootday);
       GotoXY ( 0,23); Write ('Press <Space Bar> to clear the screen.')
     end
end.  {StartUp}
```

```
        .FUNC KEYPRESS,0        ; 0 WORDS OF PARAMETERS PASSED
;*****************************************************************
;*
;*    FUNCTION KEYPRESS : BOOLEAN; EXTERNAL
;*
;*    Apple Orchard Winter 1980-81,
;*    Contact section, Page 65,
;*    Author Unknown
;*
;*****************************************************************
;
RETURN  .EQU 0                  ; STORAGE FOR RETURN ADDRESS
CONCKVEC.EQU 0BF0A              ; FIXED ADDRESS IN BIOS
RPTR    .EQU 0BF18              ; FIXED BUFFER POINTER
WPTR    .EQU 0BF19              ; FIXED BUFFER POINTER
VERSION .EQU 0BF21              ; SYSTEM VERSION NUMBER
KEYBOARD.EQU 0C000              ; KEYBOARD HARDWARE
CONCK   .EQU 0FF5C              ; WAY TO GET CONCK IN OLD SYSTEM
        PLA
        STA RETURN
        PLA
        STA RETURN+1
        PLA
        PLA
        PLA
        PLA                     ; POP 4 BYTES STACK BIAS FOR FUNCTION
        LDA #0
        PHA                     ; RETURN MSB ZERO
        LDA KEYBOARD
        BMI TRUE
        LDA VERSION
        BNE $1                  ; JUMP IF NOT ORIGINAL PASCAL VERSION
        JSR CONCK
        JMP $2
$1      JSR CONCKVEC            ; CHECK CONSOLE
$2      LDA RPTR
        CMP WPTR                ; CHAR IN BUFFER?
        BEQ EMPTY
TRUE    LDA #1                  ; YES, RETURN KEYPRESS = TRUE
        BNE KPDONE              ; ALWAYS TAKEN
EMPTY   LDA #0                  ; NO, RETURN KEYPRESS = FALSE
KPDONE  PHA                     ; PUSH LSB RESULT
        LDA RETURN+1
        PHA                     ; RESTORE
        LDA RETURN
        PHA
        RTS
; Note the use of the Local Lables $1 and $2 explained by R Haines in the
;      same issue of Apple Orchard (see above) on page 35.
;      "They provide an easy way to address locations that are a short
;      distance away form the instruction.  In addition they may be multiply
;      defined, with only the most recent definition being usable. ...
;      Because they may be redifined, local lables can be used in macros..."
;      Only 21 local lables may be used at any one time.
        .END
```

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```
        .TITLE  "EXT/CLOCK  -  14 May 1980 / 17:30"
;
;Mountain Hardware Apple Clock
;Pascal linkage routines
;1/80 by Magicke Software, Inc.
;David Ramsey
;
;
;TIMESTAMP procedure
;
;Uses public variable CS.  CS may be declared and assigned in the calling prog
;or found with the seperate function CLOCKSLOT. If CS = 8, the CLOCKSLOT
;function didn't find a clock, and the routine aborts without modifying any-
;thing.
;
;
;CLOCKSLOT function
;
;Finds clock....slot returned is used by TIMESTAMP...checks first three bytes
;of ROM code on clock card, SHOULD be able to find all MH revisions...
;
;
;
;Zero page usage:00- Return address low byte
;                01- Return address high byte
;JUMP            02- JMP opcode
;                03- Clock address low byte
;                04- Clock address high byte
;PARAM           05- Time parameter address low byte
;PARAM+1         06- Time parameter address high byte
;TEMP            07- Temporary storage used by GET
;TEMP+1          08- See above


        .MACRO POP
        PLA
        STA %1
        PLA
        STA %1+1
        .ENDM

        .MACRO FPOP
        POP     %1
        PLA
        PLA
        PLA
        PLA
        .ENDM

        .MACRO PUSH
        LDA %1+1
        PHA
        LDA %1
        PHA
        .ENDM
```

```
        .MACRO RETURN
        PUSH    %1
        RTS
        .ENDM

        .MACRO GET
        LDA #0
        STA %2+1
        LDA %1
        STA TEMP
        LDA %1+1
        STA TEMP+1
        ASL A
        ASL A
        ASL A
        CLC
        ADC TEMP+1
        ADC TEMP+1
        ADC TEMP
        SEC
        SBC #91
        STA %2
        .ENDM

        .MACRO CHECK
        LDA %1
        SEC
        SBC #28
        BPL $2
        BMI $3
$2      LDA %1
        SEC
        SBC #1
        STA %1
$3
       .ENDM

        .NOPATCHLIST

PASCAL  .EQU    0               ;Pascal return address storage area

        .FUNC CLOCKSLOT

        .PUBLIC CS        ; Mod L Geist
```

```
        FPOP PASCAL
        LDA #0
        STA 03
        LDA #0C2            ;Initial slot
        STA 04              ;We'll start looking in slot #2 and proceed
                            ;to slot 7. It can't be in some of the slots
                            ;but it's easier to scan everything than to
                            ;handle special cases, right?
LOOPO   LDY #00             ;Index
        LDA (03),Y          ;Get byte
        CMP #08             ;Check for first value
        BEQ SECON           ;It matches...check for second
NOPE    INC 04              ;Didn't match...increment base 'register'
        LDA 04              ;Load slot #
        CMP #0C8            ;Finished checking for clock?
        BNE LOOPO           ;Nope, loop back
        JMP THRU            ;(sigh)
SECON   INY                 ;Increment counter for second byte
        LDA (03),Y
        CMP #078
        BEQ THIRD           ;Second byte macthes...this may be it!
        JMP NOPE            ;Didn't match...try again...
THIRD   INY                 ;We've made it this far!
        LDA (03),Y          ;Load....
        CMP #02C            ;Compare...
        BEQ THRU            ;Found it!!!
        JMP NOPE            ;So close! Damn the fates!
THRU    LDA #0
        PHA
        LDA 04
        SEC
        SBC #0C0
        PHA
        STA CS              ; Mod L Geist
        RETURN  PASCAL
;
;
```

```
        .PROC TIMESTAMP
;Note that a JMP CX00 RTS has been set up at location $02. This is for
;an 'indirect JMP' trick. The clock routine will be called by a JSR 02
;command when needed....
;
;Note: If the ClockStuff unit is used, the variables appearing in the
;       .PUBLIC declaration must NOT be declared in the program, lest the
;compiler report an 'identifier declared twice' error. However, if these
;routines are L)inked in manually, the variables MUST be declared. They are
;of type INTEGER.
;
```

```
        .PUBLIC MONTH,DAY,HOUR,MINUTE,SECOND,MILLISECOND,CS

PARAM   .EQU 5
TEMP    .EQU 8
BASE    .EQU    0A
SAVE    .EQU    0C      ;8 BYTE RESERVED AREA
CSW     .EQU    036
KSW     .EQU    038

        POP PASCAL
        LDA CS          ;Get CLOCKSLOT
        CMP #08
        BNE CONT
        JMP BYE
CONT    CLC
        ADC #0C0        ;Add offset
        STA 04
        LDA #0
        STA 03
        LDA #4C         ;JMP opcode
        STA 2
        LDA #0C0
        STA PARAM+1
        LDA 04
        AND #0F         ;Zero upper 4 bits
        ASL A
        ASL A
        ASL A
        ASL A           ;Move lower nybble to upper nybble
        CLC
        ADC #87
        STA PARAM
        PUSH    CSW
        PUSH    KSW
        LDX #0
        LDA (PARAM,X)  ;Next four instructions are 'arcane things'
        CLI            ;(interrupt parameters, etc.) necessary for
        LDA 04         ;the clock to be read
        STA 039
        ;
        ;HERE WE GO...
        ;
STASHEM JSR INITPTR
$0      LDA (BASE,X)
        STA SAVE,Y
        JSR INCPTR
        DEY
        BPL $0
        ;
        ;NOW ITS ALL SAFE & SOUND!
        ;
        JSR 02          ;This gets the time
        ;
        ;RESTORE IT ALL...
        ;
```

```
RESTORE JSR INITPTR
$0      LDA SAVE,Y
        STA (BASE,X)
        JSR INCPTR
        DEY
        BPL $0
        ;
        ;I HOPE THAT WORKED!
        ;
        GET 0286,SECOND
        CHECK SECOND
        GET 0289,MINUTE
        CHECK MINUTE
        GET 028C,HOUR
        GET 028F,DAY
        GET 0292,MONTH

        LDA #0          ;Now for the fun part- milliseconds!
        STA TEMP+1
        LDA 284
        SEC
        SBC #0B0
        STA TEMP        ;TEMP now set
        ASL A           ;Must multiply by 100, which we accomplish by
        ASL A           ;multiplying by ten TWICE.
        ASL A           ;Three shift lefts multiply by eight-
        CLC
        ADC TEMP
        ADC TEMP        ;...and two adds make ten
        STA TEMP        ;Store hundreds of MSECS times ten
        STA PARAM
        LDX #3
LOOP    ASL TEMP        ;Now we do it again
        ROL TEMP+1
        DEX             ;Decrement counter
        BNE LOOP        ;Finish three ASLs
        LDX #2
LOOP2   CLC
        LDA TEMP
        ADC PARAM
        STA TEMP
        LDA TEMP+1
        ADC #0          ;Adding an 8 bit value to a 16 bit word...
        STA TEMP+1
        DEX
        BNE LOOP2
        LDA 283         ;Get tens of msecs
        SEC
        SBC #0B0
        STA 283
        ASL A
        ASL A
        ASL A           ;Look familiar?
        CLC
        ADC 283
```

```
        ADC 283
        STA 283
        LDA 282
        SEC
        SBC #080
        CLC
        ADC 283
        ADC TEMP
        STA MILLISECONDS
        BCC FINI
        INC TEMP+1
FINI    POP     KSW
        POP     CSW
        LDA TEMP+1
        STA MILLISECONDS+1
BYE     RETURN  PASCAL  ;Finished!

INITPTR LDA #0F8
        STA BASE
        LDA #07
        STA BASE+1
        LDY #7
        LDX #0
        RTS

INCPTR  LDA     BASE
        SEC
        SBC     #080
        STA     BASE
        BCS     INCRTN
        INC     BASE+1
INCRTN  RTS

        .END
```

HAAUG:EXTCLOCK.TEXT

MEETING NOTICE

On Saturday, March 27, Lee Gilbreth will discuss the evolution and use of File Cabinet, the popular public domain data base program. The presentation will begin at approximately 3:00 P.M.

THE TAX MANAGER by TASO from Micro Lab
A Review by Ruth Dill

It's tax time again, and one of the best uses we can make of our Apples is putting them to work on our taxes.

THE TAX MANAGER on the whole is relatively easy to use and performs its functions efficiently. It provides a Tax Guide which allows the user to answer pertinent questions after completion of which the tax forms and schedules he will need are listed.

A Tax Checklist can be used to enable you to take full advantage of the deductions you are entitled to. The menu lists:

1. Taxable Income Items
2. Items Not Taxable
3. Business or Professional Deductions
4. Farm Deductions
5. Deductions Toward Adjusted Gross Income
6. Investment Tax Credit
7. Energy Tax Credit Items
8. Itemized Deductions
9. Non-deductible Items
10. Review an Entire Category
99. Return to Tax-Manager Menu

Through option 10, you can review an entire category, or, if you know what item you are looking for you can do a keyword search.

From the Tax-Manager Menu, you may list the forms you will need in sequence and will then be able to go from one form to another without returning to the menu or you may select each form individually from the menu. Data is entered onto the form. If the form or schedule is too large to be shown on the Apple screen at one time, it is divided into "pages" which are shown in sequence. You may go forward to the next page or back up to the last page by utilizing command keys listed in the control panel.

Tax Manager automatically recalculates amounts each time you enter data, for the page you are viewing as well as for all other items on that page affected by the new data. The recalculation also links the correct amounts from schedule to schedule/schedule to form. You do not have to go through each

Cont'd.

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form and schedule individually to ensure that the new data entered is correctly calculated and reflected throughout.

Taxpayers are saved by name to the data disk or disks and you can switch from one disk to another. Each time you switch disks the taxpayers saved on that disk are displayed.

There are two ways to obtain printed output. Control P allows you to print a copy of the form displayed on the screen. Selecting "Print Tax Forms" from the Tax Preparation Menu will print out facsimile forms in a format acceptable for filing with IRS, EXCEPT FOR FORM 1040! The IRS requires that Form 1040 be printed on a preprinted form. the print option allows you to print the data for the 1040 on a preprinted Form 1040, or you may print out the facsimile form 1040 and copy it to the preprinted form. If you plan to submit the printouts of the facsimile forms and schedules, the IRS requires that they be submitted on quality, lined, machine paper.

A sample disk named "Uncle Sam" is included in the package for you to play around with and to familiarize you with the program.

I did encounter some difficulties, however, and these were:

1. It is necessary to type somewhat slowly when making entries otherwise letters will be skipped. A number of times I had to correct omissions due to this problem.

2. In Schedule C, the program does not figure any depreciation. You are referred to their ASSETS MANAGER program . This information is not difficult to figure and type in. However, it seems to me that having bought a program to figure the tax return, it should perform as expected. Form 4562 which covers depreciation on equipment bought during 1981 was not included although there were pages in Schedule C under Depreciation to cover these items.

3. Depreciation for equipment such as Apple which would be listed on Form 2106 - Employee Business Expenses is not deductible unless all deductions are itemized. Tax Manager calculates tax both ways and uses the method which is most advantageous. However, if it takes the standard deduction, it does not disallow the items on Form 2106 which are not allowed due to taking this deduction. This should be watched for if you use 2106.

4. When you have completed the forms and select "Print Tax Forms", the program asks if you want to save this

return. You input "Y", of course, then you are told to turn to Disk Side #2 and press Return. You are supposed to get a print menu at this point. However, what I got was the Tax Preparation Menu again. In order to get the print menu, you have to press Reset, which, of course, clears the program from memory. Then you reboot with PR #6. This gives you the print menu, which indicates that there is no current taxpayer in memory. You have to "Select a New Taxpayer", which would be the name of the person whose return you were just working on, and wait while it is reloaded into memory. Then you can select the forms in the sequence you prefer and print. This works but it is awkward and time consuming.

Other than the problems mentioned above, I found that the program worked well and I had fun running it. If you try it and find any other differences, I would appreciate hearing from you.

Ruth Dill
204 N. Main St.
Highlands, TX 77562
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APPLE PERIPHERALS ARE OUR ONLY BUSINESS

THE HAAUG-HAM, by Ed Seeger, WB5PTW

With increasing numbers of ham radio operators joining HAAUG there are more and more questions arising about how to use the Apple as a part of an amateur radio station. I've been a ham operator for over twenty years now, and an Apple owner for three-and-a-half. And while I can't claim to have "seen it all", I have tried to pay attention to who's doing what, and where and how. Let me tell you what I think I know so far, and I'd welcome your own information and observations to be added to mine.

Many of you have already see Chris Galfo's set of programs for video-displaying CW, RTTY and SSTV. (That's Morse code, Radio TeleTYpe and Slow-Scan TeleVision, respectively, to you non-hams who are reading this.) Dr. Galfo, WB4JMD, produced this nifty software on cassettes and sold them out of his home back in 1978 or '79. I bought those programs and the accompanying documentation. Unfortunately, the packages seem to be out of print these days, which is a shame, because they do a fine job of turning the dah-di-dah-dit dah-dah-di-dah, the deedle-deedle-deedle and the eight-second buzz saw tones into TV displays that even the non-ham can readily appreciate.

I still use Galfo's software, but run it from a DOS 3.3 disk these days. The Morse package requires a little hardware to turn the dits and dahs from your speaker into the five volt TTL levels the Apple game paddle connector can handle. The machine language software takes it from there. I never did get the circuit working that was included in the documentation, however. But I have found another solution using my RTTY terminal unit. More about that below.

Transmitting code is easier. The program accepts text from the Apple keyboard -- it even remembers your stock phrases and calls them up on command through a set of what are in effect "keyboard macros" -- and squirts the text out ready for direct connection to your keying circuit. If you are impolite enough to speak while being spoken to, you can store your replies in a memory buffer -- this is called a "live keyboard" -- and automatically empty your ramblings over the air without further intervention on your part. There's even a Times Square-like moving marquee that shows your text traveling from right to left and onward and upward into the ether. If you think programs supplied on cassettes must have been truly Dark Ages material, you are wrong. This stuff still impresses, even in these modern times of Apple DOS and expensive disk-based software.

Displaying and transmitting radio teletype is done in much the same fashion. You do need some kind of a terminal unit to translate the sweet sounds of Baudot into voltages the Apple can in turn translate into even sweeter ASCII. I confess I overdid things a bit and went whole-hog for a spiffy IRL FSK-1000 terminal unit, with all three shifts, autostart, and a contin-

Cont'd.

uously-tunable shift for people who know what to do with features like that. I don't, but it's there for when I find out! It only costs 100+10*RND(9) percent more to go first class. But all you really need is a no-frills demodulator. Fletcher makes one and circuits abound if you're up to a little home brewing.

I have been amazed at the number of hams out there who are doing computerized RTTY. A lot of them are using Apples and some are all the way into stand-alone dedicated units; why, I don't know. After you're done hamming, what can you do with the things? At least with a true computer, you can keep recipie files, or whatever those tacky articles in the airlines' in-flight magazines think you and I do with our machines. Even more hams are running the TRS-80. Although I have not begun to send RTTY myself, I do a lot of "reading the mail" and it doesn't take long to find out who's using what equipment.

Price considerations aside, the popularity of the Radio Shack in the ham shack seems to derive from the success of the Macrotronics, Inc., "Terminal1" device and its predecessors. Dr. Ron Lodewyck, N6EE, and Wayne Reindollar developed this hardware/software package in the late 1970's and marketed an Apple version as model A-650, the TRS-80 version as the M800 with M80 interface. Apparantly, the TRS-80 users out-demanded the Apple users and the A-650 was discontinued, although Amateur Electronic Supply still has a few on the shelf.

I bought the documentation for that early device and judged the whole setup to be terribly unwieldy to use, certainly not as manageable as WB4JMD's software with a good outboard terminal unit. Admittedly, the A-650 was more powerful, with such features as optional line numbering and software switching of mark and space tones that Galfo had not provided. On the other hand, Galfo's project was undertaken in the days when many Apples had only a scant 8K of memory (rev. 6 and earlier) and it cost a bundle to upgrade to even 16K. Lodewyck, whose design trailed Galfo's by only a matter of months -- and which was, by the way, also cassette-based -- Lodewyck was able to take advantage of the availability of cheaper RAM and so his package assumed and required 16K. Naturally you can do a lot more in twice the memory.

Macrotronics has not sold a system for the Apple ham for some time now. However, I recently telephoned them and learned that a "Terminal1" for the Apple is expected to be released "soon". As my mother used to say to me as she was on her way out of the house, "don't expect me till you see me". The new unit is reported to be a great improvement over the original A-650 and will undoubtedly as a minimum match feature-for-feature the existing TRS-80 package.

Take a look at Macrotronics' ad on page 95 of the March, 1982, "QST" magazine to see what Rat Shack owners have that we do not. I do hope our version will provide for saving received text to disk, or even allow us to prepare text ahead of time in a DOS file and call it up on demand. Such capability is a virtual sine

Cont'd.

qua non for advanced RTTY operators, who have for years used punched tape for storage of artwork and brags. NOTE to non-hams who have read this far: BRAG is not a new DOS command for machine language; it's merely a canned "mine's bigger than yours" rap that tells the ham on the receiving end what equipment I'm using and dares him to have as expensive a station! You know, "ask me about my grandbaby".

Other hams among us have had reasonable success with the "Radcom Plus+" Amateur Radio Communications Package, built to the design of Alex M. Massimo, AF6W, in San Diego. Like the Macrotronics approach above, Radcom Plus+ is a software/hardware system, with a terminal unit demodulator built onto an Apple slot #2 card. The software, which at least as first released required so-called "Interger" (sic) BASIC, was developed by C. H. Galfo, WB4JMD! During his disappearance, Galfo had considerably upgraded his original program. As supplied with the Radcom board, it now was able to load and save text to and from disk and memory buffer, log contacts to disk, repeat the entire previous transmission and gave on-screen tuning indicators. Again, the key was cheap RAM, now that just about everybody had a 48K coffee warmer plugged in.

But there was a catch, and Macrotronics is currently guilty of this also. What about the many, many hams who have been around a while and already have money tied up in a terminal unit? Why should we have to buy <u>another</u> TU, this one on an Apple peripheral card, just to be able to run good ham software? Massimo's product is an inseparable package, as is Lodewyck's. Love me, love my tractor. We know from Galfo's first programs that CW and RTTY software does not <u>have</u> to be hardware-dependent. Sure, it's nice for the beginner who wants an easy way to break into computer hamming <u>and</u> RTTY at the same time; he or she is relieved not to have to make decisions about which terminal to buy or which Morse decoder to wire up. (I gave up on Galfo's circuit and finally just adjusted my TU to put out TTL voltage swings when I tuned over top of a CW station.)

There are two possible answers. The truly creative ham-computerist will rip off a copy of the Massimo-Galfo software, disassemble it while searching for the I/O routines aimed at that card in slot #2, and will redirect I/O through, say, the game port or maybe the cassette jacks, which just lie there unused anyhow after the first month with your Apple. Surely this is theoretically possible, and the new storing and logging features of the software make the effort attractive, although illegal. If Massimo is sharp, he's already working on just such a possibility.

A second approach lies within a small ad in a recent issue of "Micro", the 6502/6809 journal. It's the "Egbert RTTY Program". This is a $40 program that demodulates RTTY <u>in software</u>! That's right, no black box with mark-space indicators, no current loop, no oscilloscope (and probably no possibility of attaching one, either). I've put my money out (what, me disassemble somebody's software?) and have received it. I will report on it in an upcoming issue of "Apple Barrel".

Cont'd.

According to the blurb, Egbert's program uses the cassette ports in direct connection to the transmitter/receiver. The Apple both generates and decodes RTTY tones at 60, 67, 75 and 100 words per minute Baudot and 110 baud ASCII. A tuning indicator is accomplished through one of the hi-res screens. Received text and art can be saved off to disk, there is automatic CW identification, and more. $39.95! I'll let you know, but be warned that if it's good you'll have to mail away for your own copy. My ham call is coded in there for automatic CW identification!

GAME CONTEST RESULTS

The game contest held at the Saturday Meeting on February 27 was a big success, thanks to the efforts of Susan Wettling. The contest was limited to youngsters through high school, with two groups, 4 through 11 and 12 through 18. Three games, Apple Panic, Snack Attack, and Space Eggs were set up on four Apples, with each participant permitted two chances on each game. The results of the competition are as follows:

Junior Division
Michael Rogge, age 10, Apple Panic, score 13980
Steven Otillar, age 11, Snack Attack, score 2900
Susan Scheuer, age 10, Space Eggs, score 1610

Senior Division
Chris Myers, age 16, Apple Panic, score 107000.
John Coolidge, age 15, Snack Attack, score 3798

Special thanks to Susan ,the judges, DeWayne Van Hoozer for loaning his custom-painted red Apple, and the donors of the prizes, Moore Business Center, Computer City, Computer Technique, Computercraft, and the Compushop.

APPLEFEST/HOUSTON

At Applefest '82 hundreds of manufacturers, distributors, and dealers will showcase the entire spectrum of Apple-compatible products including computers, components, peripherals, plug-in cards, publications, software, etc. for office, home, and school. This year Applefest will be held in Houston at the Albert Thomas Convention Center November 19-21 from 1 P.M to 10 P.M. daily. Admission charge will be $5 per day, $8 for 2 days, $12 for 3 days. Plan to attend!!

ANOVA by Dynacomp

A Review by Nick Fotheringham

Analysis of variance (ANOVA) is a powerful statistical tool designed to test the equality of means of several samples. For example, in an agricultural experiment it could be used to test whether or not corn plants grew at the same rate in different test plots, and whether different fertilizer or water treatments applied to these plots significantly affected the rates of growth.

The ANOVA package offered by Dynacomp is supplied on a DOS 3.2 disk which can be "muffined" to a 3.3 version. The menu offers five options: (1) an unbalanced, replicated, one-way, n-level ANOVA, (2) a balanced, replicated, 2 factor, n-level ANOVA, (3) a balanced, replicated 3-5 factor, n-level ANOVA, (4) a balanced, replicated, n-factor, 2 level ANOVA, and (5) and an editing routine. Data may be entered from the keyboard or from a disk, although data from a disk must have been stored with a precisely defined structure, which is only likely to exist if the data file had been created by the ANOVA package during a previous session. The program length is about 12K bytes, and it is designed to run on a 16K or larger system.

I have tested the one-way and 3-way procedures using textbook data sets. The decimal points in the mean squares for the one-way ANOVA had been moved, apparently to provide a better output format, and thus the output was not correct. The lengthy output for the 3-way ANOVA raced passed my screen without benefit of a stop every 24 lines. Thus it required several runs for me to observe that the output was correct. I found the package disappointing in its dependence on balanced designs for all but the one-way ANOVA, its lack of customized output, and its rigid disk file structure requirements. Fortunately, once "muffined", the program can be listed and modified. I immediately enhanced my version by adding 2- and 3-way unbalanced ANOVA's to the menu. It also is a reasonably simple enhancement to enter an array of factor names to the input so that the output can be printed using "DOSEAGE", "SEX", "AGE", etc., instead of "FACTOR 1", "FACTOR 2", etc. The disk file generated by the program is a sequential file of data points containing almost no information about its own structure. Thus it is advisable to take ample notes whenever data is stored by the program to ensure that it can be recovered properly.

Finally, error traps appear to be very limited in this program. Most wrong guesses as to the input requested by the program resulted in a rude termination with no interpretable message.

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For sale: Teletype ASR-43M Printer Terminal, $450. 300 Baud Modem, $100. Call Edwin Miller at 664-5216

For sale: T.I. 59 Calculator with extras, $170. Call J. Totten evenings at 644-4824

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APPLE III NEWS

Three utility programs for the APPLE III have been added to the HAAUG software library. One is the old standby, FILE CABINET, which has been adapted to the APPLE III. With the increased memory and execution speed of the Three this is an excellent freebe. A second program is an improved version of the APPLE II emulation diskette. This version of the emulation diskette allows you to configure the RS 232-C output to a number of printers including adjusting the baud rate, odd or even parity, etc.. It increases the utility of the emulation mode significantly. The third diskette has a self-documented utility for converting APPLE II DOS 3.3 text files to APPLE III SOS text files. Many APPLE II basic programs can be converted to the APPLE III and run with minimum changes with this utility.

There are a number of pre-packaged programs now available for the APPLE III at the local stores. There are two word processing packages: WORD JUGGLER by Quark Engineering and APPLE WRITER III from Apple. APPLE WRITER III is signficantly different from the original APPLE WRITER. It will interface with VISICALC so VISICALC screens can be included in your text. It will also interface with a MAIL LIST MANAGER program also available from Apple Computer Co.. Additional programs include PASCAL UTILITIES, a set of commonly used programming routines which can be used with APPLE III Pascal. A simple text editing program for program development called SCRIPT III. A modem utilities program, APPLE ACCESS III, is also available. This latter program adds the ability to interface the APPLE III with a modem and use the various remote data bases such as The Source, Dow Jones, etc.. This utility also has the capability of uploading and downloading text files and will allow the APPLE III to be connected to mainframes etc. by configuring for various terminal modes. APPLE III BUSINESS GRAPHICS will plot data input from the keyboard or from VISICALC, Basic or Pascal files. In addition to supporting Qume and Silentype printers, APPLE III BUSINESS GRAPHICS will output to Hewlett-Packard and Houston Instrument plotters. DESK TOP PLAN III from Personal Software is also available. This is a powerful financial reporting system which has been available for the APPLE II for several years. The PFS database management system is also available for the Three. While this list is not complete, most of these products have shown up in the last few weeks. It appears that products for the APPLE III are begining to hit the stores in a big way.

APPLE III owners who sent in their warrenty cards should be receiving a package from Apple Computer announcing the latest sofware enhancements. All system software including System Utilites, Visicalc III, and Business Basic have been upgraded to Versions 1.1 to use the improved SOS 1.1. Revised manuals are also available. This package also includes a program diskette, Apple III Confidence Program, for testing all aspects of the Apple III including disk drives.

No mention of new APPLE III products would be complete without mentioning the APPLE III ProFile a five megabyte Winchester type hard disk. This is also on display at most local Apple dealers. Business Basic and Pascal files can be intermixed on ProFile.

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AN IMPROVED BOOT UTILITY PROGRAM
BY RICHARD PARRISH

I had recently bought a language card and talked a friend of mine into doing the same. He wanted to expand the capacity of programs like Visicalc, but he wanted to still use his Integer Basic Firmware card for his kids who liked to play games in Integer BASIC without loading the language card. It had to be automatic for his kids to use. After looking through the DOS manual and some other references I came up with this program. It will first check to see if you have a language card, then check if it has already been loaded with a BASIC, even after a PR#6!. If the latter is the case, it will restore it, but if the card is empty it looks at slot four for a firmware card. If that is the case then the program will modify DOS to recognize it in slot four. If there is nothing in slot four it will load the language card with Integer BASIC. This program was written in Applesoft but can be easily adapted to Integer BASIC or modified to take any language card, RAM or ROM, in any slot!

Lines 1 through 7 POKE the language card finder into memory. The machine language code subroutine works by POKEing the slot number times 16 into memory location 771. Then a CALL 769 is done to execute the subroutine (line 18) which returns with a number at location 768 which must be PEEKed. If a PEEK(768) yields a zero then there is no language card in that slot, a 1 means an empty language card, and a 2 represents a loaded language card or firmware card. If you have any questions or want to convert this program to Integer BASIC then call me at 448-5952.

```
]LIST

1  TEXT : HOME :D$ =  CHR$ (13) +
     CHR$ (4)
2  FOR I = 768 TO 820: READ J%: POKE
     I,J%: NEXT
3  DATA 0,72,162,0,173,0,224,157,
     128,192,205,0,224,240,24,238
     ,0
4  DATA 3,173,1,224,173,1,224,201
     ,0,208,14,238,0,3,189,129,19
     2,189,129
5  DATA 192,169,32,141,0,224,141,
     130,192,104,96,0,0,0,0,0,0
6  PRINT "UNIVERSAL BOOT UTILITY
              DOS 3.3"
7  POKE 42424,128: POKE 42432,129
     : POKE 768,0: POKE 771,0
8  GOSUB 18
9  IF X% = 0 THEN 12
10  IF X% = 1 THEN 13
11  IF X% = 2 THEN 21
12  END
13  POKE 768,0: POKE 771,64: REM
     SLOT# TIMES 16
14  GOSUB 18
15  IF X% = 0 THEN  PRINT "( NOW
     LOADING LANGUAGE CARD )": GOTO
     19
16  IF X% = 2 THEN  PRINT "INTEGE
     R BASIC IS AVAILABLE IN SLOT
      4"
17  POKE 42424,192: POKE 42432,19
     3: GOTO 20
18  CALL 769:X% =  PEEK (768): RETURN

19 X% =  PEEK ( - 16255) +  PEEK
     ( - 16255): PRINT D$"BLOAD I
     NTBASIC,A$D000"
20 X% =  PEEK ( - 16254): GOTO 22

21  PRINT "INTEGER IS READY...": GOTO
     20
22  END
```

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Data Capture 4.0 intelligent terminal program, $40
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Dan's Disk Utility + Single Disk Copy, DOS 3.2, both for $10
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The games are excellent for children or for new Apple users. Call Ed Seeger, 723-6919. All software is original.

MORE SOFTWARE:

App-L-ISP, by Datasoft, Inc. A Full LISP interpreter, with editor, prettyprinter, manual, "Towers of Hanoi" demonstration program. This is a recursive language, often applied to so-called "Artificial Intelligence" work. No problems with it, I'm just using a different and much more expensive LISP these days. $75.00 Ed Seeger, 723-6919.

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DISK COPYING PROBLEMS

BY

Richard Davis

At the January 31,1982 H.A.A.U.G. meeting I had six disks copied from the club library. Of the six disks only one was readable on my Apple. A little research reveals the probable cause and a simple solution.

The copies were made with COPY II PLUS which is a good fast copy program but it must be used properly to achieve satisfactory results.

I will refer to a first generation copy (or disk) as one that has been initiated and then had data added by COPYA, FID, SAVE, BSAVE, etc. These disks all have a standard format that includes synch marks, Address Field Headers (D5 AA AD) and Trailers (DE AA EB) with the address information and the data between the respective headers and trailers. The gaps between Address Field Trailers and Data Field Headers have a few synch marks (minimum is about 5) while the gaps between the Data Field Trailers and Address Field Headers have more synch marks, usually quite a few more. These can easily be observed by using a program listed in "BENEATH APPLE DOS" by Don Worth and Pieter Lechner (Quality Software).

COPY II PLUS uses these headers and synch marks to get oriented for making a copy and initiates and writes the track all at one time. However, the distribution of synch marks is much different on a second generation copy (when compared to a first generation copy). However, there is still sufficient information for the disk to be read an used by DOS, COPYA, FID, etc.

When COPY II PLUS is used to make a third generation copy from a second generation copy the degradation of synch marks is so great that the third generation copy is seldom useable. There is usually no indication that the copy has been unsuccessful until one attempts to use the third generation copy. A nibble dump of the third generation disk shows large blocks of garbage without headers (probably because the copy program did not get in synch) and large blocks of synch marks. On one third generation copy we were even able to find two sectors still intact and readable that had been present before the copy operation and should have been scratched or written over. In other words COPY II PLUS failed to write anything on these sectors.

Cont'd.

COPYA will satisfactorily copy a second generation COPY II PLUS disk, creating a new first generation so the process can restart. All that is needed for the H.A.A.U.G. Library sessions is to be sure that all the source disks used are first generation disks created with one of the programs that properly initiates the disk. Then the QUICK (and dirty) COPY II PLUS can be used at the copy sessions satisfactorily.

It should be noted that a COPY II PLUS copy using the "Standard Header Option" seems to build a satisfactory third generation copy but we have not tested beyond that point. We use Version 2.2 of COPY II PLUS . Later versions may not be the same.

I am aware that our disk drives do not run at the same speed and suspect that this may aggravate the problem. However the speed difference does not bother any other operations. Nibble dumps of the unreadable copies from the library showed the same pattern as our third generation copies.

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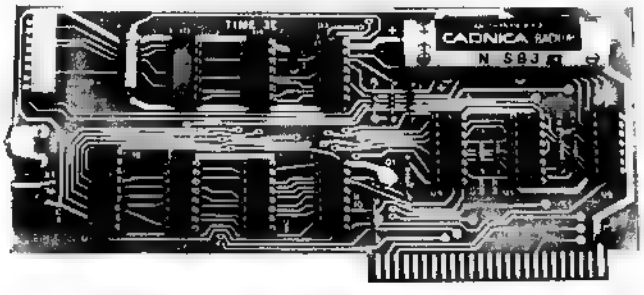

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PRINT AT

By: D. Van Hoozer

The 'PRINT AT' subroutine on the following page is the first cut version of a more extensive print formatting system which includes implementation of the 'PRINT USING' function for Applesoft. 'PRINT AT' is used for moving the cursor to a specific spot on the Apple II screen.

I used Bob's S-C Assembler to code the source, but if you do not have an assembler you can still use the subroutine by copying the POKE statements listed below. I used Kramer's POKE maker to generate them. For information on the POKE maker see Kramer's article in the previous issue.

There is at least one modification that I would recommend making. At line 1290 there is a JSR FP.CHRGET instruction which could be changed to:

```
JSR FP.CHRCLS      /* CHECK FOR ')' */
JMP FP.PRINT       /* GOTO TO THE FP PRINT ROUTINE */
```

Delete the RTS at 1300. It's not needed.

This modification allows you to append normal print stuff after the last ')' thus doing away with a couple more keystrokes.

```
]LIST

5  HOME
10  FOR XX = 768 TO 799
20  READ BYTE: POKE XX,BYTE
30  NEXT XX
40  DATA  32,187,222,32,123,221,3
      2,251,230,202,134,37,32,34,2
      52,32,190,222,32,123,221,32,
      251,230,202,134,36,32,177,0,
      96,0
50  & (6,4): PRINT "ROW 6, COLUMN
      4"
60  END

]
```

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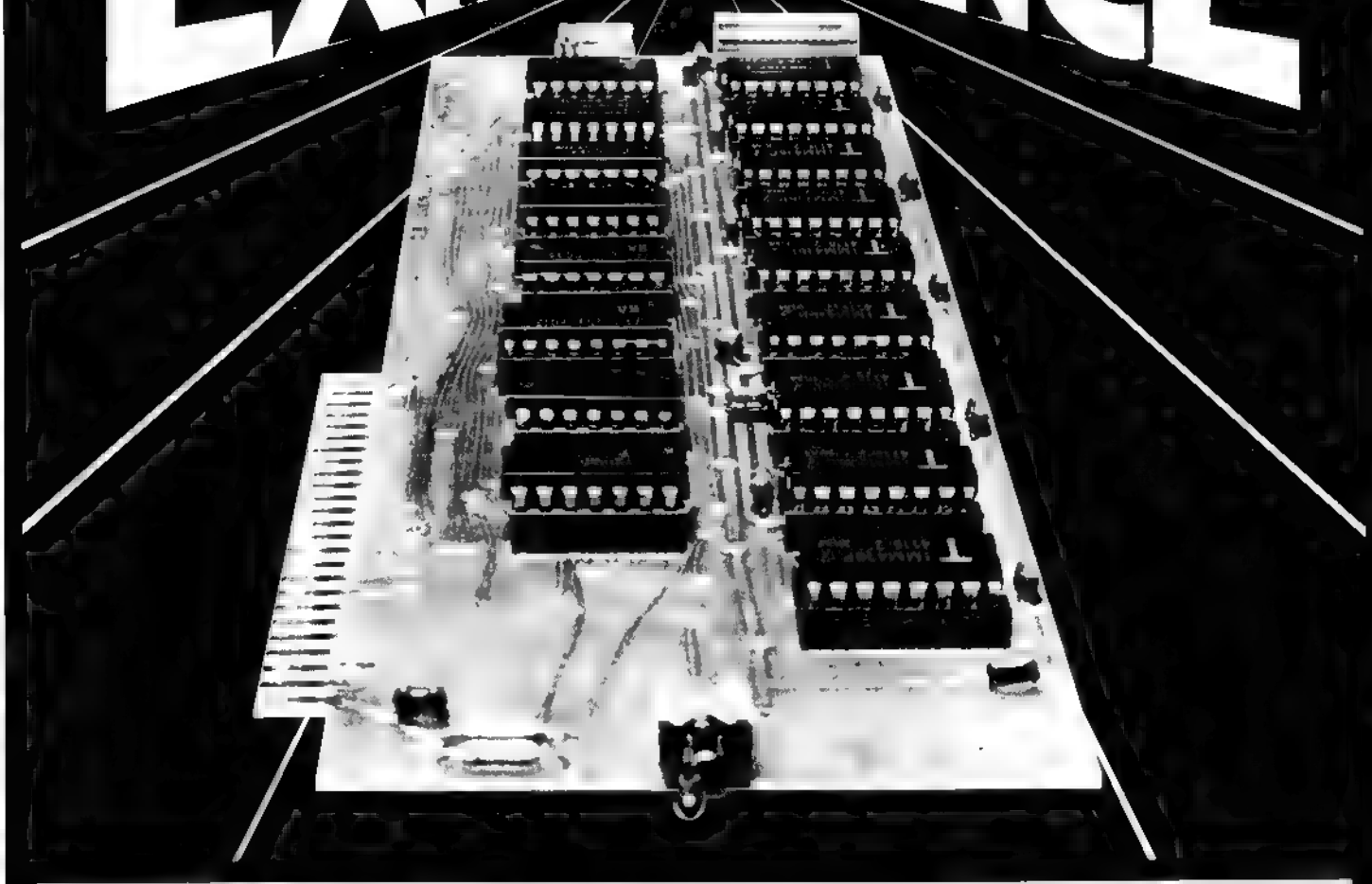

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```
:ASM

                1000 *--------------------------------
                1010 *       PRINT AT
                1020 *       BY D. VAN HOOZER
                1030 *--------------------------------
                1040 *
00B1-           1050 FP.CHRGET   .EQ $00B1
DD7B-           1060 FP.FRMEVL   .EQ $DD7B
DEB8-           1070 FP.CHKCLS   .EQ $DEB8
DEBB-           1080 FP.CHKOPN   .EQ $DEBB
DEBE-           1090 FP.CHKCOM   .EQ $DEBE
E6FB-           1100 FP.CONINT   .EQ $E6FB
0024-           1110 MON.CH      .EQ $24
0025-           1120 MON.CV      .EQ $25
FC22-           1130 MON.VTAB    .EQ $FC22
                1140 *
                1150         .OR $300
                1160 *
0300- 20 BB DE  1170         JSR FP.CHKOPN /*IS IT A '('*/
0303- 20 7B DD  1180         JSR FP.FRMEVL /*GET THE ROW*/
0306- 20 FB E6  1190         JSR FP.CONINT /*CONVERT TO INTEGER*/
0309- CA        1200         DEX           /*ADJUST FOR OFFSET*/
030A- 86 25     1210         STX MON.CV
030C- 20 22 FC  1220         JSR MON.VTAB  /*GOTO THE RIGHT ROW*/
                1230 *
030F- 20 BE DE  1240         JSR FP.CHKCOM /*IS THE NEXT CHAR A COMMA?*/
0312- 20 7B DD  1250         JSR FP.FRMEVL /*GET THE COLUMN*/
0315- 20 FB E6  1260         JSR FP.CONINT /*CONVERT TO INTEGER*/
0318- CA        1270         DEX           /*ADJUST OFFSET*/
0319- 86 24     1280         STX MON.CH    /*SET HORIZONAL*/
031B- 20 B1 00  1290         JSR FP.CHRGET /*ADJUST TO POINT AT NEXT CHARACTER*/
031E- 60        1300         RTS

SYMBOL TABLE

DEB8- FP.CHKCLS
DEBE- FP.CHKCOM
DEBB- FP.CHKOPN
00B1- FP.CHRGET
E6FB- FP.CONINT
DD7B- FP.FRMEVL
0024- MON.CH
0025- MON.CV
FC22- MON.VTAB

:FP

]PR#0
]?CHR$(9);"30L"
```

```
]LOAD PRINT AT.TEST
]POKE33,33

]LIST

5 R = 10:C = 5
10  POKE 1013,76: REM  JMP
20  POKE 1014,0
30  POKE 1015,3
40  HOME
50  & (5,5): PRINT "ROW 5 COLUMN 5"
60  & (1,1): PRINT "ROW 1 COLUMN 1"
70  & (R,C): PRINT "ROW #";R;" COL #";C
80  FOR R = 11 TO 19
90 C = C + 1
100  & (R,C): PRINT "HELLO AT (";R;",";C;")"
110  NEXT R
999  END

]PR#0
```

See if you can figure what this is all about.
Call the Hotline if you do.

]CALL-151

*5000.5177

```
5000- D0 D5 C2 CC C9 C3 A0 CB
5008- C5 D9 A0 BD AB B0 C1 AE
5010- A0 D5 D3 C5 A0 C1 D0 D0
5018- CC C5 A0 C1 D3 C3 C9 C9
5020- AE 0D 0D 0D 17 17 17 17
5028- 5E 59 44 2A 59 61 58 4F
5030- 5C 5D 2A 59 50 2A 5E 52
5038- 4F 2A 5C 4F 4E 2A 4C 59
5040- 59 55 17 50 5C 59 57 44
5048- 2A 57 4B 4E 2A 4C 59 57
5050- 4C 4F 5C 17 17 17 53 2A
5058- 4B 57 2A 4E 53 5D 4B 5A
5060- 5A 59 53 58 5E 4F 4E 2A
5068- 41 53 5E 52 2A 5E 52 4F
5070- 2A 4D 5F 5C 5C 4F 58 5E
5078- 2A 4B 4D 5E 53 60 53 5E
5080- 53 4F 5D 2A 59 50 2A 52
5088- 4B 4B 5F 51 38 2A 2A 5E
5090- 52 4F 5C 4F 2A 53 5D 2A
5098- 60 4F 5C 63 2A 56 53 5E
50A0- 5E 56 4F 17 5C 4F 4B 5D
50A8- 59 58 2A 50 59 5C 2A 5F
50B0- 5D 2A 5E 59 2A 4D 59 57
50B8- 4F 2A 5E 59 2A 4B 58 63
50C0- 2A 59 50 2A 5E 52 4F 2A
50C8- 57 4F 4F 5E 53 58 51 5D
50D0- 38 2A 5E 52 4F 5D 4F 2A
50D8- 57 4F 4F 5E 53 58 51 5D
50E0- 2A 4B 5C 4F 2A 4B 56 56
50E8- 2A 4E 4F 5D 53 51 58 4F
50F0- 4E 17 50 59 5C 2A 5E 52
50F8- 4F 2A 58 59 60 53 4D 4F
5100- 2A 4B 5A 5A 56 4F 2A 59
5108- 61 58 4F 5C 38 2A 61 4F
5110- 2A 52 4B 4D 55 4F 5C 5D
5118- 2A 4B 5C 4F 2A 56 4F 50
5120- 5E 2A 59 5F 5E 38 2A 53
5128- 2A 5E 52 53 58 55 2A 53
5130- 5E 5D 2A 5E 53 57 4F 2A
5138- 61 4F 2A 5E 4B 55 4F 17
5140- 57 4B 5E 5E 4F 5C 5D 2A
5148- 53 58 5E 59 2A 59 5F 5C
5150- 2A 59 61 58 2A 52 4B 58
5158- 4E 5D 38 17 17 53 50 2A
5160- 63 59 5F 2A 50 4F 4F 56
5168- 2A 5E 52 4F 2A 5D 4B 57
5170- 4F 2A 61 4B 63 2A 53 2A
*3D0G
(5000):_
```

*5178.5237

```
5178- 4E 59 2A 5A 56 4F 4B 5D
5180- 4F 2A 4D 4B 56 56 2A 5E
5188- 52 4F 2A 52 59 5E 56 53
5190- 58 4F 2A 32 40 40 42 37
5198- 42 40 42 3F 33 2A 4B 58
51A0- 4E 2A 56 4F 4B 60 4F 17
51A8- 58 4B 57 4F 2A 4B 58 4E
51B0- 2A 5E 4F 56 4F 5A 52 59
51B8- 58 4F 2A 58 5F 57 4C 4F
51C0- 5C 38 2A 4B 58 63 2A 4D
51C8- 59 57 57 4F 58 5E 5D 2A
51D0- 4B 4C 59 5F 5E 2A 57 4F
51D8- 4F 5E 53 58 51 2A 5E 53
51E0- 57 4F 5D 2A 4B 58 4E 2A
51E8- 5D 5F 4C 54 4F 4D 5E 5D
51F0- 2A 61 53 56 56 17 4C 4F
51F8- 2A 60 4F 5C 63 2A 52 4F
5200- 56 5A 50 5F 56 56 38 17
5208- 17 17 13 13 57 4B 4E 2A
5210- 4C 59 57 4C 4F 5C 36 17
5218- 13 13 4D 52 53 4F 50 2A
5220- 59 50 2A 4D 59 60 4F 5C
5228- 5E 2A 4B 4D 5E 53 60 53
5230- 5E 53 4F 5D 38 17 17 00
*3D0G
(5000):_
]PR#0
```

```
]LIST

10 A = 20516
20 D =  PEEK (A)
30  IF D = 0 THEN  END
40  POKE A,D + 10
50 A = A + 1
60  GOTO 20

]PR#0
]LIST

10 A = 20516
20 D =  PEEK (A)
30  IF D = 0 THEN  END
40 A$ =  CHR$ (D - 10)
45  PRINT A$;
50 A = A + 1
60  GOTO 20

]PR#0
```

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Articles and program listings should be submitted in hardcopy form, and, if possible, on disk in Applewriter, Professional Easywriter, Palantir, or Pascal compatible files. If not submitted on disk, articles must be free of typing or spelling errors as they cannot be retyped. Diskettes will be returned to the author provided his name and address are on them. Printed material should be printed using normal size characters, a new ribbon and enhanced print if your printer is so equipped. Margins should be set at 10 and 70 for articles. Listings should be printed in 40 column mode and may be printed in compressed print. Thermal paper should be avoided because it does not reproduce well. Articles should be submitted to:

Houston Area Apple Users Group
Apple Barrel
2218 Running Springs
Kingwood, TX 77339

ADVERTISING RATES

FULL PAGE	HALF PAGE	QTR PAGE	8TH PAGE	BUS.CARDS
$50	$28	$18	$10	$5

Advertisements should be submitted in camera ready form to H.A.A.U.G., 2218 Running Springs, Kingwood, TX, 77339, by the 10th of the month. Charges will be billed and accompanied by a copy of the Apple Barrel containing the ad.

HAAUG MEMBERSHIP SURVEY

First Name _____ Init. _____ Last Name _____ Home Phone _____

Street Address _____ Apt.# _____ City _____ State _____ Zip _____

Occupation _____ Company _____ Work Phone _____

Business Address _____ City _____ State _____ Zip _____

Prefer Mail To: Home / / Work / /

Ages of children using your Apple? _____

Childrens' areas of interest? _____

SPECIAL INTERESTS (Check all that apply)

Science/Engineering	---	Games/Puzzles	---
Business Applications	---	Data Base Systems	---
CP/M	---	Modems/Communications	---
Education	---	Hardware	---
Assembly Language	---	BASIC	---
Pascal	---	Forth	---
FORTRAN	---	Graphics	---
Music	---	Stock Market	---
Real Time Applications	---	DOS	---

OTHER _____

CLUB PARTICIPATION AREAS (Check where you want to help)

Write articles for Apple Barrel	---	Maintain hardcopy library	---
Help prepare Apple Bbl for mail	---	Write programs for library	---
Evaluate programs for library	---	Maintain program library	---
Help run program copy session	---	Bring Apple to copy session	---
Coordinate hardware projects	---	Coordinate group purchases	---
Present lectures or tutorials	---	Arrange vendor presentations	---
Assist in new member orientation	---	Assemble and label starter kits	---
Copy starter kit disks/tapes	---	Xerox starter kit material	---
Hold office in club	---	Other _____	

The HAAUG Membership survey provides a data base for use in getting members with similar interests together and in finding those who are willing to help in the running of the club. Please send in the completed form to the address below or hand it in at the meetings to the new member chairman.

MIKE KRAMER
2218 RUNNING SPRINGS
KINGWOOD, TX 77339

INTERNATIONAL PERSONNEL SERVICES

I. P. S. functions as a Personnel and Executive Search Agency in Engineering, Financial, Administration, and Data Processing Diciplines with both domestic and foreign positions. We would be happy to discuss our services with you as a client firm or for placement. Feel free to call us or look for us at the Saturday H.A.A.U.G. meetings and we will put our Apple to work for you. "IPS- the computerized placement professionals."

Darrell Raithel
Senior Associate

J. Back
Senior Associate

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SYSTEMS:_____

LANGUAGES:_____

APPLICATIONS:_____

INDUSTRIES:_____

POSITIONS HELD:_____

For paid placement evaluation, please use this tear out form or send resume to International Personnel Services, 50 Briar Hollow East, Suite 620, Houston, TX 77027.

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2218 Running Springs
Kingwood, TX 77339

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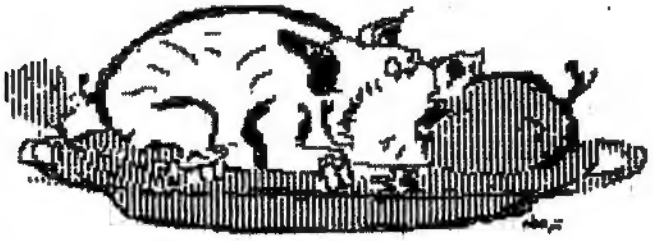

H . A . A . U . G .